Fuji Electric FA Components & System Co., Ltd. FRENIC 5000G115/P11S

Supported version TOP Design Studio V4.0 or higher



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Describes the cable specifications required for connection.

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Refer to this section to check the addresses which can communicate with an external device.



1. System configuration

The system configuration of TOP and "FRENIC 5000G11S/P11S" is as follows:

Series	СРИ	Communication method	System setting	Cable
FRENIC	5000G11S/P11S	RS-485C	3.1 Settings example 1	5.1. Cable table 1
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Connection configuration

Master

• 1:1 connection (one MASTER and one TOP) connection

	TOP

• 1:N connection (one MASTER and multiple TOPs) connection





2. External device selection

■ Select a TOP model and a port, and then select an external device.

DIG 1							
PLC select [C	OM2]						
Filter : [All]			\sim		Search :		
					۲	Model () Vendor
Vendor EMOTIONTEK		Model					
			MICREX-SX	Series			
RKC Instrument Inc.		8	FRENIC 50	00G11S/P11S			
HANYOUNG NUX		8	MICREX-F	Series			
SAMWONTECH		•					
SICK AG.							
FUJI Electric Co., Ltd.							
SANGJI Precision Co., L	td.						
DEVA							
OPTICON							
TOHNICHI							
Giddings & Lewis Motion	Control						
DELTA TAU Data Syster	ns						
KEYENCE Corporation							
Digital Electronics Corpo	vration Y						
elect Device							
PLC Setting[FREN		/P115]				
elect Device PLC Setting[FREN Alias Name Interface	: PLC1]				
PLC Setting[FREN Alias Name Interface						Comm I	Manual
PLC Setting[FREN Alias Name Interface	: PLC1 : Computer Link : FGI Bus		~			Comm I	Manual
PLC Setting[FREN Alias Name Interface Protocol String Save Mode	: PLC1 : Computer Link : FGI Bus : First LH HL		>			Comm I	Manual
PLC Setting[FREN Alias Name Interface Protocol String Save Mode	: PLC1 : Computer Link : FGI Bus : First LH HL		>			Comm 1	Manual
PLC Setting[FREN Alias Name Interface Protocol String Save Mode	: PLC1 : Computer Link : FGI Bus : First LH HL	Cha	>			Comm 1	Manual
PLC Setting[FREN Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : Change Condition :	: PLC1 : Computer Link : FGI Bus : First LH HL	Cha	v v			Comm I	Manual
PLC Setting[FREN Alias Name Interface Protocol String Save Mode Use Redundan Operate Condition : Change Condition :	: PLC1 : Computer Link : FGI Bus : First LH HL EV ND ~ TimeOut	Cha	v v				Manual
PLC Setting[FREN Alias Name Interface Protocol String Save Mode Use Redundanc Operate Condition : Change Condition :	: PLC1 : Computer Link : FGI Bus : First LH HL PY ND 1 TimeOut 1 Condition	Cha 5	v v				Manual
PLC Setting[FREN Alias Name Interface Protocol String Save Mode Use Redundanc Operate Condition : Change Condition : Primary Option Timeout	: PLC1 : Computer Link : FGI Bus : First LH HL EY ImeOut Condition 300	Cha 5 msec	v v				Manual
PLC Setting[FREN Alias Name Interface String Save Mode Use Redundant Operate Condition : Change Condition : Primary Option Timeout Send Wait	: PLC1 : Computer Link : FGI Bus : First LH HL V V TimeOut 1 Condition 300 0 C	Cha 5	v v				Manual
PLC Setting[FREN Alias Name Interface Protocol String Save Mode Use Redundance Operate Condition : A Change Condition : C Primary Option Timeout Send Wait Retry	: PLC1 : Computer Link : FGI Bus : First LH HL CV TimeOut 1 Condition 300 5 5 5 5 5 5 5 5 5 5 5 5 5	Cha 5 msec	v v				Manual
PLC Setting[FREN Alias Name Interface String Save Mode Use Redundant Operate Condition : Change Condition : Primary Option Timeout Send Wait	: PLC1 : Computer Link : FGI Bus : First LH HL V V TimeOut 1 Condition 300 0 C	Cha 5 msec	v v				Manual
PLC Setting[FREN Alias Name Interface Protocol String Save Mode Use Redundance Operate Condition : A Change Condition : C Primary Option Timeout Send Wait Retry	: PLC1 : Computer Link : FGI Bus : First LH HL CV TimeOut 1 Condition 300 5 5 5 5 5 5 5 5 5 5 5 5 5	Cha 5 msec	v v				Manual
PLC Setting[FREN Alias Name Interface Protocol String Save Mode Use Redundance Operate Condition : A Change Condition : C Primary Option Timeout Send Wait Retry	: PLC1 : Computer Link : FGI Bus : First LH HL CV TimeOut 1 Condition 300 5 5 5 5 5 5 5 5 5 5 5 5 5	Cha 5 msec	v v				Manual
PLC Setting[FREN Alias Name Interface Protocol String Save Mode Use Redundance Operate Condition : A Change Condition : C Primary Option Timeout Send Wait Retry	: PLC1 : Computer Link : FGI Bus : First LH HL CV TimeOut 1 Condition 300 5 5 5 5 5 5 5 5 5 5 5 5 5	Cha 5 msec	v v				Manual
PLC Setting[FREN Alias Name Interface Protocol String Save Mode Use Redundance Operate Condition : A Change Condition : C Primary Option Timeout Send Wait Retry	: PLC1 : Computer Link : FGI Bus : First LH HL CV TimeOut 1 Condition 300 5 5 5 5 5 5 5 5 5 5 5 5 5	Cha 5 msec	v v				Manual

Settings			Contents		
ТОР	Model	Check the TOP display and	Check the TOP display and process to select the touch model.		
External device	Vendor		Select the vendor of the external device to be connected to TOP. Select " FRENIC 5000G11S/P11S ".		
	PLC	Select an external device to	connect to TOP.		
		Model	Interface	Protocol	
		FRENIC 5000G11S/P11S	CPU Direct	OPEN PROTOCOL	
		Please check the system co connect is a model whose s	5	o see if the external device you want to	



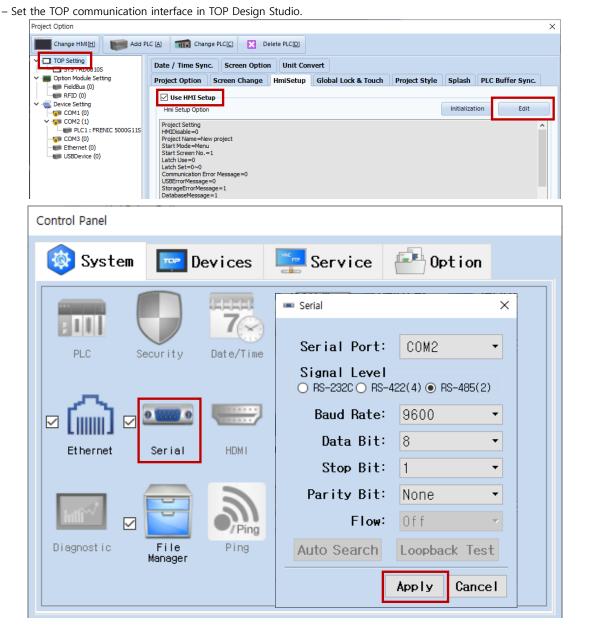
3. TOP communication setting

The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

3.1 Communication setting in TOP Design Studio

(1) Communication interface setting

■ [Project > Project Property > TOP Setting] → [Project Option > "Use HMI Setup" Check > Edit > Serial]



Items	ТОР	External device	Remarks	
Signal Level (port)	RS-485	RS-485		
Baud Rate	9600			
Data Bit	8			
Stop Bit	1			
Parity Bit	NONE			

* The above settings are examples recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.



(2) Communication option setting

■ [Project > Project Property > Device Setting > COM > "PLC1 : FRENIC 5000G11S/P11S"]

- Set the options of the **FRENIC 5000G11S/P11S** communication driver in TOP Design Studio.

Project Option		×
Change HMI[H] Kald PLC [A] Change PLC[C] Change PLC[C]		
PLC Setting [FRENC 50006115/P115] Sits: ED08105 PLC Setting [FRENC 50006115/P115] Alas Name: PLC1 PLC Setting [FRENC 50006115/P115] Alas Name: PLC1 PLC Setting [FRENC 50006115 Protoci: FGE Bus Protoci: FGE Bus String Save Mode: FIst LH HL Change Use Redundancy Operate Condition: ImeOut Condition Ethernet (0) USEDevice (0) Protoci: FGE Bus String Save Mode: Fist LH HL Change Condition: ImeOut String Save Mode: Fist LH HL Change Change Condition: ImeOut String Save Mode: Fist LH HL Change Condition: Edit Protoci: Fast LH HL Change Condition: ImeOut String Save Mode: Fist LH HL Change Condition: Edit Primary Option Timeout Satistic Second) Edit Primary Option Timeout Satistic Second) Station Num Station Num Station Num Station Num Station Num Station Num Satistic Station Num Satistic Num Satistic Station Num Satistic Nu		mm Manual
	Apply	Close

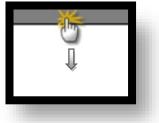
Items	Settings	Remarks
Interface	Select "Computer Link".	Refer to "2. External
Protocol	Select "FGI Bus".	device selection".
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device	
	and sending the next command request.	



3.2. Communication setting in TOP

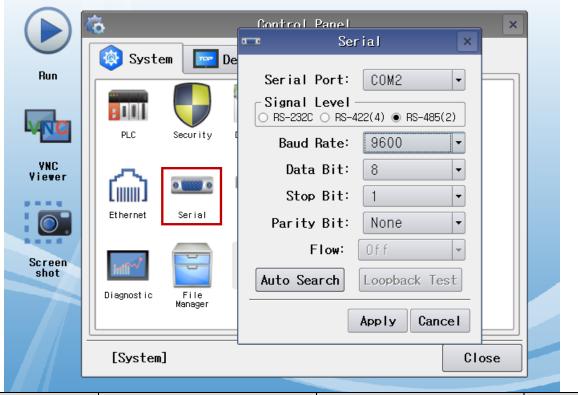
* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

■ Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.



(1) Communication interface setting

■ [Main Screen > Control Panel > Serial]



		-	
Items	ТОР	External device	Remarks
Signal Level (port)	RS-485	RS-485	
Baud Rate	9600		
Data Bit	8		
Stop Bit	1		
Parity Bit	even		

* The above settings are setting examples recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.



(2) Communication option setting

■ [Main Screen > Control Panel > PLC]

	6	101	PLC	×
	🔯 System	Driver(COM2)	PLC1(FRENIC 5000G11S/P11S) -	
Run		Interface	Computer Link 🔹	
		Protocol	FGI Bus	
	PLC Se	Timeout	300 🗭 msec	
VNC		Send Wait	0 🖨 msec	
Viewer		Retry	5	
	Ethernet S	Station N	1	
O .				
Screen	. mit			
shot				
	Diagnostic Ma			
	[System]	Diagnostic	Apr	ly Cancel
l				
Items	Settings			Remarks
Interface	Select "Compu	ter Link".		Refer to "2. Externa
Protocol	Select "FGI Bus			device selection".
TimeOut (ms)	Set the time fo	or the TOP to wait for	r a response from an external device.	
SendWait (ms)	Set the waiting	time between TOP's	receiving a response from an external device	
	and sending th	ne next command rec	quest.	



3.3 Communication diagnostics

■ Check the interface setting status between the TOP and an external device.

- Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.
- Check if the COM port settings you want to use in [Control Panel > Serial] are the same as those of the external device.
- Diagnosis of whether the port communication is normal or not
- Touch "Communication diagnostics" in [Control Panel > PLC].
- The Diagnostics dialog box pops up on the screen and determines the diagnostic status.

ОК	Communication setting normal
Time Out Error	Communication setting abnormal
	- Check the cable, TOP, and external device setting status. (Reference: Communication diagnostics sheet)

Communication diagnostics sheet

- If there is a problem with the communication connection with an external terminal, please check the settings in the sheet below.

ltems	Contents		Check		Remarks
System	How to connect the system		OK	NG	1. Containing firm with a
configuration	Connection cable name		OK	NG	1. System configuration
ТОР	Version information	OK	NG		
	Port in use	OK	NG		
	Driver name	OK	NG		
	Other detailed setting	OK	NG		
	Relative prefix	Project setting	OK	NG	
		Communication diagnostics	ОК	NG	2. External device selection 3. Communication setting
	Serial Parameter	Transmission Speed	ОК	NG	
		Data Bit	OK	NG	
		Stop Bit	OK	NG	
		Parity Bit	OK	NG	
External device	CPU name		OK	NG	
	Communication port r	OK	NG		
	Protocol (mode)	OK	NG		
	Setup Prefix	OK	NG		
	Other detailed settings		OK		NG
	Serial Parameter	Transmission Speed	ОК	NG	4. External device setting
		Data Bit	OK	NG	
		Stop Bit	OK	NG	
		Parity Bit	OK	NG	
	Check address range				6. Supported addresses
			ОК	NG	(For details, please refer to the PLC vendor's manual.)



Refer to the vendor's user manual to identically configure the communication settings of the external device to that of the TOP.



5. Cable table

This chapter introduces a cable diagram for normal communication between the TOP and the corresponding device. (The cable diagram described in this section may differ from the recommendations of "FRENIC 5000G11S/P11S")

■ **RS-485** (1:1 connection)

ТОР					External device
Pin	Signal	Pin	Cable connection	Signal	
arrangement*Note 1)	name	number		name	
1 5	RDA(+)	1	• •	SDA(+)	
		2	•	SDB(-)	
69		3		RDA(+)	
Based on	RDB(-)	4		RDB(-)	
communication	SG	5		SG	
cable connector	SDA(+)	6	•		
front,		7			
D-SUB 9 Pin male		8			
(male, convex)	SDB(-)	9	-		

*Note 1) The pin arrangement is as seen from the connecting side of the cable connection connector.



6. Supported addresses

The devices available in TOP are as follows:

The device range (address) may differ depending on the CPU module series/type. The TOP series supports the maximum address range used by the external device series. Please refer to each CPU module user manual and be take caution to not deviate from the address range supported by the device you want to use.

Area	Bit address	Word address	RW	BIT	
F	0.00-42.15	0–42	R/W	16BIT	Fundamental Functions
E	0.00-47.15	0–47	R/W	16BIT	Extension Terminal Functions
С	1.00–33.15	1–33	R/W	16BIT	Control Functions of Frequency
Р	1.00–9.15	1–9	R/W	16BIT	Motor Parameters
Н	3.00–39.15	3–39	R/W	16BIT	High Performance Functions
А	1.00–18.15	1–18	R/W	16BIT	Alternative Motor Parameters
U	1.00–61.15	1–61	R/W	16BIT	User Function
0	1.00–29.15	1–29	R/W	16BIT	Optional Functions
S	1.00–12.15	1–12	R/W	16BIT	Setting Data Functions
М	1.00–54.31	1–54	R	32BIT	Monitoring Data Functions